

IN RE UNITED STATE PATENT APPLICATION

FOR

**TABLETOP GAME WITH REFLECTIVE OR LIGHT
TRANSMITTING SURFACE**

OF

MICHAEL J. OISTER

THOMAS M. DOHERTY

AND

WILLIAM C. BOETTCHER

TABLETOP GAME WITH REFLECTIVE OR LIGHT TRANSMITTING SURFACE

RELATED APPLICATIONS

This application is a continuation-in-part of United States Patent
5 Application 10/424,494, filed April 25, 2003, titled "TABLETOP GAME WITH
LIGHTED FEATURES," which is a continuation-in-part of United States Patent
Application 10/224,051, filed August 20, 2002, titled "TABLETOP GAME WITH
LIGHTED PLAYING FIELD."

FIELD OF THE INVENTION

10 The present invention relates to tabletop games and, more particularly, to
tabletop sports games, such as foosball, baseball, basketball, bowling, hockey, or
the like, having a reflective or light transmitting surface.

BACKGROUND OF THE INVENTION

Many arcade style tabletop games exists. Some of the more popular
15 arcade style tabletop games simulate soccer (or football as it is known outside of
the United States) and hockey. These games typically comprise a tabletop
playing field that simulates the field and players of the actual game. While the
below application refers to soccer simulations, a.k.a. foosball games, one of
ordinary skill in the art will recognize other tabletop games can be substituted
20 for foosball.

A foosball table includes rows of representative athletes, suspended like
pendulums from control rods that are mounted transversely above a playing field.
Players slide and rotate the control rods to make the athletes kick a small ball,
attempting to score a goal. The representative athletes are suspended over a
25 playing field that represents a traditional soccer field. Often times, the

traditional field is modified in the corners to provide a slope so the foosball does not get caught in the corner. Instead of slopes, some style foosball games have representative goalies (one or more) that can extend into the one or the other of the corners.

5 While generally enjoyable in its own right, these tabletop games frequently do not sustain the interest of players for any length of time. Thus, it would be desirable to produce a tabletop game having additional features to increase interest in the tabletop game.

SUMMARY OF THE INVENTION

10 To attain the advantages and in accordance with the purpose of the invention, as embodied and broadly described herein, a tabletop game is provided having a clear, translucent or semi-translucent surface. A light source is placed under the surface.

 Another feature of the present invention is a tabletop game with lighted
15 representative players. Still another feature of the present invention is a tabletop game with lighted sidewalls.

 Yet another feature of the present invention provides a playing surface with a reflective top layer or an electro-luminescent top layer.

 The foregoing and other features, utilities and advantages of the invention
20 will be apparent from the following more particular description of a preferred embodiment of the invention as illustrated in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWING

 The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the present invention, and
25 together with the description, serve to explain the principles thereof. Like items in the drawings are referred to using the same numerical reference.

 FIG. 1 shows a perspective view of a foosball game illustrative of the present invention;

FIG. 2 shows a side plan view of the foosball game illustrative of the present invention;

FIG. 3 is a perspective view of a playing surface associated with one potential embodiment of the present invention;

5 FIG. 4 is a cross sectional view of a tabletop game illustrative of the playing surface described in FIG. 3;

FIG. 5 shows a perspective view of a playing field for the game shown in FIG. 1 consistent with the present invention; and

10 FIG. 6 shows a perspective view of another playing field for the game shown in FIG. 1 consistent with the present invention.

DETAILED DESCRIPTION

The present invention will be further explained with reference to FIGS. 1 to 6. With reference to FIGs. 1 and 2, a representation of a soccer field is generally illustrated by playing field 10. Playing field 10 may include indicia of
15 a regulation soccer field including, for example, goalie box 12, center kickoff circle 14, center line 16, and the like. Playing field 10 is surrounded by sidewall 18. Instead of regulation markings, playing field 10 may have indicia of players, whimsical designs, or the like.

Playing field 10 is made, at least in part, of a material clear, transparent,
20 translucent, or semi-translucent to light. For simplicity, the term translucent as used in this application, is intended to encompass anything other than opaque. For example, playing field 10 could be a clear plastic, glass, colored plastic, colored glass, a frosted glass like surface, or the like. Further, playing field 10 could have portions of the playing surface translucent (including varying degrees
25 of translucence) or opaque to form patterns and designs in the playing surface. Still further, playing field 10 could be designed to have a lighting effect that may reflect, refract, or disburse light, such as, for example, a prism. A light source, which will be explained further below, can be placed below the playing field 10, providing a lighted surface on which foosball could be played.

Referring now to FIG. 2, a side plan view of the foosball table is provided. Residing beneath playing field 10, is at least one light source 20. As shown, light source 20 could be a single florescent light tube extending down the center of the playing surface. Of course, the tabletop game could be designed so that the light is completely or partially enclosed by the sidewalls. However, multiple rows of florescent light tubes may be used. Further, light tubes could be arranged parallel or diagonal to the long or short dimension of the playing field 10. Other types of lights, however, could also be possible, such as, incandescent lights, halogen lights, light strings (such as Christmas lights), leds, leds, lasers, electro luminescent light sources, chemical light sources, light tubes, flexible light wires, or the like. Still further, one or more light sources may be mounted in sidewalls so lights tubes, such as florescent lights would not have to run the length of the playing field. In general, almost any arrangement of light can be provided depending on the lighting effect desired. Further, light source 20 could be a strobe light or other light that has an on and off feature, similar to a timer, or a string of blinking Christmas lights. Still further, it would be possible to have a dimmer to manually or automatically control the brightness of light source 20. Finally, a timer could be used to control an on and off pattern of the lights and the dimmer.

Instead of having light source 20 reside beneath the playing field 10 as shown, it would be possible to mold a glass or plastic playing surface such that one or more tubes or conduits 32 existed in the playing field 10, as shown in phantom in FIG. 3. For example, FIG. 3 shows three conduits 32 molded in playing field 10. In this case, conduits 32 are open to each end 34 of playing field 10, but conduits 10 could be open on one, both, or neither side. If ends 34 and conduits 32 are not open, light could be coupled, refracted, or reflected into conduits 32 through a solid end 34. While conduits 32 are shown generally straight and parallel the longer dimension of playing field 10, other configurations are possible. Conduits 32, for example, do not need to be identical, could be curved, could be part curved and part straight, could be

diagonal, or the like. Further, conduits 32 are shown with a cylindrical geometric shape, but other shapes are possible whether irregular, random, or geometric. Further, ridges, grooves and other imperfections in the conduits may cause desirable lighting effects (such as a prism effect).

5 FIG. 3 shows optional reflective layer 36. Instead of reflective layer 36, a reflective surface 38 could be supplied, which is shown in phantom. Reflective layer 36 or reflective surface 38 can be any conventional light reflecting surface, such as a mirror or mirrored coating on, for example, glass. While reflective layer 36 or reflective surface 38 could be used with any light source mentioned
10 to provided various lighting effects, it is contemplated that reflective layer 36 or reflective surface 38 would enhance the ability of light source(s) 20 residing along a sidewall to illuminate areas of playing field 10 not substantially adjacent light source(s) 20.

 It is believe using reflective layer 36 or reflective surface 38 will reduce
15 the amount of light the light source needs to provide. By reducing the amount of light the light source needs to provide, it is hoped that the number of lights that need to be packaged will be reduced.

 A light source (not shown in FIG. 3) could be placed such that light from the source shines down conduits 32. Instead of simply providing a light source,
20 conduits 32 could be lined to enhance the light or light carrying ability. Further, emitting tubes could be placed in conduits 32 to assist in light transmission. Such light carrying tubes are described in, for example, United States Patent No. 5,879,076, titled "METHOD AND APPARATUS FOR LIGHT TRANSMISSION," issued on March 9, 1999. Other light tubes include electro luminescent lights as described
25 in, for example, United States Patent No. 5,485,335, titled "ELECTROLUMINESCENT LIGHT SOURCES," issued on January 16, 1999, United States Patent No. 5,860,930, titled "ELECTROLUMINESCENT LIGHT SOURCE WITH A MIXTURE LAYER FILLED WITH A TRANSPARENT FILLER SUBSTANCE," issued on February 9, 1999, and United States Patent No. 6,400,093, titled "FLEXIBLE
30 ELECTROLUMINESCENT LIGHT SOURCE WITH ACTIVE PROTECTION FROM

MOISTURE,” issued June 4, 2002, incorporated by reference. Electro luminescent light sources are sometimes known as flexible light wire. Other light sources include chemical luminescent compositions, which are sometimes known as light sticks, such as United States Patent No. 4,313,843, titled “SUPERIOR OXALATE
5 ESTER CHEMICAL LIGHTING SYSTEM,” issued on February 2, 1982, and United States Patent No. 4,678,608, titled “CHEMILUMINESCENT COMPOSITION,” issued on July 7, 1987. All of which are incorporated herein by reference.

Referring back to FIG. 1, residing substantially about playing surface 10 are a plurality of representative players 22. While not shown in detail, one or
10 more players 22 could incorporate various types of lights also. For example, flexible light wire could be used to illuminate an edge of one or more players 22, LCD light sources could be used to illuminate a strike surface 22s on one or more players 22. It is contemplated that players 22 could have some type of electro luminescent light source or chemical luminescent light source because,
15 for manufacturing purposes, it would be difficult to supply a power source to players 22. However, other styles of light sources can be used, such as, conventional lights, lasers, strobes, halogens, fluorescents, and the like. Power for lights could be supplied by running power through bars 24 on which players 22 reside, in this case, by batteries (not shown) contained in players 22, or the
20 like. Other style games may have more or less options for supplying power to players 22. For example, a hockey style game typically has runners in playing surface 10 instead of bars 24 for players 22. Thus, contacts could be supplied along the runners to enable power to players 22.

Tabletop games, be they foosball games, table hockey games, football
25 games, or baseball games, basketball games, or the like generally define playing field 10 by a sidewall 18. As mentioned above, sidewall 18 may have lights affixed to reduce other lighting requirements. Further, sidewall 18 may also be translucent, opaque, or a combination thereof to provide reflective light from light source 20 or a separate light source 20 residing in sidewall 18. Moreover,
30 in some embodiments of the present invention, playing field 10 may be

completely opaque, but sidewall 18 may be at least partially translucent to allow light to pass.

Referring now to FIG. 4, a tabletop game 400 is shown using the reflective surface 38. As shown by the cross sectional view, game 400 has a playing surface 10 surrounded by sidewalls 18. For convenience, one representative player 22 (the goalie) is shown on a series of cross bars 24. Under playing surface 10 is light source 20 arranged on sidewall 18. Sidewall 18 can be arranged as shown to have a continuous side, or sidewall 18 could be broken into separate parts, such as a playing field portion above playing field 10 and a support portion below playing field 10. In this case, a single light source 20 is shown between playing field 10 and a reflective surface 38, such as a mirror. Arrows 42 indicate how the single light source 20 can illuminate the entire playing field by reflecting light off of surface 38. If playing surface 10 had a layer or coating 44 of a partially reflective material, more light would be transmitted to side 200 opposite light source 20. Partially reflective means some light passes through layer 44 and some is reflected back to reflective surface 38. The amount of light actually passed by the partially reflective material is a matter of design choice. Fig. 4 also shows a ball drop 46. If, as mentioned above, lights are provided on players 22, power could be supplied to the players by wires 48 running through cross bars 24.

In some instances it may be desirable not to provide light source 20 below playing surface 10. As shown in FIG. 5, playing surface 10 may be coated with a light reflective material 50, such as a mirrored surface or a bike reflector material (which reflective materials are generally known in the art and will not be further explained herein), that simulates the effect of light being transmitted through most of playing field 10. In particular, conventional overhead lights 52, specially designed overhead lights, natural sunlight, moonlight, or lights emanating from sidewalls 18 as described above (all shown generically as reference number 52), would shine light as shown by arrow A to be reflected off reflective material 50 as shown by arrow B causing a similar lighting effect over

playing surface 10. Further, reflective material 50 could have patterns of reflective and non-reflective surfaces to make special designs. For example, the majority of playing surface 10 could be coated with reflective material 50 and non-reflective material 52 (shown in phantom) could be place to show respective
5 goalie boxes or the like. Alternatively, for example, the reflective material could be used for field trim. Designs could also be implemented by having different levels of reflectivity in material 50 over the course of playing surface 10. Of course, other designs are possible. For example, portions of playing surface 10 may be comprised of a light transmissive surface and portions may be comprised
10 of a light reflective material causing alternative lighting effects.

FIG. 6 shows an alternative-playing surface 60. Playing surface 60 would also be useful for the situations where it is undesirable to install a light beneath a light transmitting playing surface 10. Playing surface 60 has an electro-luminescent light sheet 62 and a bottom support material 64. Light sheet 62 has
15 an activated luminous layer 66, typically made out of phosphor powder, but can be constructed using other organic and inorganic materials, contained in a laminate material 68. A plug 70 and power strip 72 connects power supply (not shown) to luminous layer 66, which causes, for example, the phosphor powder to glow. Light sheet 62 is generally available in the art and will not be further
20 explained herein. Electro-luminescent sheet lamps are generally known in the art, see for example, United States Patent Number 4,159,559, titled METHOD OF MAKING PLASTIC EL LAMP, issued July 3, 1979, to Robinson Sr. Bottom support material 64 would be a plastic or wooden material to provide sufficient stability to light sheet 62 as light sheet 62 is relatively flexible. Laminate 68 could have
25 patterns of transparent, translucent, and opaque portions to provide various lighting effects. Laminate 68 could also be colored or partially colored. Laminate 68 could also provide refractive and reflective surfaces for even more lighting effects. Instead of covering the entire playing surface 60 with electro-luminescent light sheet 62, light sheet 62 could be applied strategically to

provide particular lighting effects. For example, in tabletop, light sheet 62 may be used for the center red line and the blue lines.

While the invention has been particularly shown and described with reference to particular embodiment(s) thereof, it will be understood by those
5 skilled in the art that various other changes in the form and details may be made without departing from the spirit and scope of the invention.